

the essence of which is "impressibility," and may be described as a more or less complex arrangement for carrying about, nourishing, and propagating a plexus of sensations.

The two initial questions may then, in conclusion, be answered as follows :—

(1) Vertebrate limbs are differentiations of continuous lateral folds. They are therefore not limited to four, and are for locomotive convenience. There might apparently be several successive paired limbs on each side, just as there are often several successive dorsal fins paired ; and azygos fins and limbs being of the same nature, each separate part may be called a pterygium, and for the sum total of the whole the term *sympterygium* may be employed.

(2) Piscine limbs are related to digit-bearing limbs as structures which have diverged less from the primitive condition, a natural consequence of fishes making use of their fins in that medium in which the primitive continuous lateral folds were first developed.

This paper will be published entire in the Society's Transactions.

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The following papers were read :—

1. Reports on the Collections of Birds made during the Voyage of H.M.S. 'Challenger.'—No. VII. On the Birds of Cape York and the neighbouring Islands (Raine, Wednesday, and Booby Islands). By W. A. FORBES, F.Z.S.

[Received December 18, 1877.]

The collection of Birds made by H.M.S. 'Challenger' at Cape York and in its neighbourhood, of which the following is an account, comprises 61 skins, referable to 37 species. As might have been expected, all, or nearly all, belong to well known Australian forms, one or two only being left uncertain for want of more materials and on account of the immature condition of the specimens. Most of the skins are in excellent condition ; and their value is much increased by the notes in Mr. Murray's journal as to the colour of the soft parts &c. Besides Cape York, Raine Island (at the end of the Barrier Reef), Wednesday Island (in Torres Straits), and Booby Island (also in Torres Straits) were visited, and collections made. I copy the following extracts from Mr. Murray's journal as regards the localities where birds were obtained :—

"Raine Island, Barrier Reef, Australia. Ship landed two boats for nearly three hours. The following birds were taken" (several sea-birds, *Rallus pectoralis*, and *Strepsilas interpres*).

"Cape York, Somerset. Ship arrived on evening of 1st Sept., 1874 ; left Cape York on Sept. 8th." (44 skins were obtained here).

"Wednesday Island, Torres Straits. Parties landed the same day (Sept. 8). Most of the birds seen were the same as those shot

about Cape York. The following two, however, have not been procured at Cape York; they were shot on shore (*Totanus incanus* and *Ægialites inornatus*). A great many flocks of Bee-eaters were noticed making passages between the islands."

"On 9th Sept., 1874, a party landed on Booby Island, a very small island, with only a few shrubs on it. The following land birds were shot or brought on board; and in addition a Rail was seen, a *Megapodius*, and one other land bird." (The species obtained were *Todirhamphus sanctus*, *Merops ornatus*, *Zosterops luteus*, *Pachycephala* sp., *Ptilopus superbus*, and *Synœcus cervinus*.)

In the following list I have, with a few exceptions, followed the arrangement and nomenclature of Mr. Gould's 'Hand-book to the Birds of Australia.'

#### 1. NINOX BOOBOOK (Lath.).

*Ninox boobook*, Sharpe, Cat. of B. ii. p. 168.

*Spiloglaux marmoratus*, Gld. Handb. B. Austr. i. p. 73.

One male skin of this species from Cape York. No. 167. "Stomach contained insects" (Murray, MS.).

The specimen sent agrees generally with two skins in Mr. Godman's collection from the same locality, and with Mr. Gould's description of *Spiloglaux marmoratus*, which Mr. Sharpe, in the second volume of his catalogue, treats as "the adult of the large form of *N. boobook*" (l. c. p. 170).

#### 2. PODARGUS PAPUENSIS, Quoy & Gaim.

*Podargus papuensis*, Quoy & Gaim. Voy. de l'Astrol. Ois. t. 13; Gould, B. of Austr. Supp. pl.; id. Handb. B. Austr. i. p. 91.

"No. 186, ♀. Eyes red, feet and bill light yellow. Stomach contained insects." Cape York, one specimen.

#### 3. MEROPS ORNATUS, Lath.

*Merops ornatus*, Gld. B. of Austr. ii. pl. 16; id. Handb. i. p. 117.

In all four specimens of this common Australian species. Two females from Booby Island (Nos. 199, 200), and a pair (♂ & ♀) from Cape York (nos. 147 and 178). Of all the eyes are stated to be "red," and the feet and legs black, except the female from Cape York, which is described as having the legs "with violet tint." The three females differ considerably from one another in the length of the produced middle tail-feathers; in the male the produced part is thinner and at least twice as long as in the other sex.

#### 4. TODIRHAMPHUS SANCTUS (Vig. & Hors.).

*Todirhamphus sanctus*, Gld. Handb. B. Austr. i. p. 128; Sharpe, Alced. pl. 91.

One specimen from Booby Island. "No. 192, ♂. Eyes black; mandibles black, except base of lower one, which is whitish. Stomach had remains of a crab."

## 5. HALCYON MACLEAYI, Jard. &amp; Selby.

*Halcyon macleayi*, Jard. & Selby, Ill. Orn. vol. iii. pl. 101; Gld. B. of Austr. ii. pl. 24; Sharpe, Alc. pl. 78.

*Cyanalcyon macleayi*, Gld. Handb. B. Austral. i. p. 133.

One male specimen from Cape York. "No. 161. Eyes, bill, and legs black. Stomach contained insects."

## 6. ARTAMUS LEUCOPYGIALIS, Gld.

*Artamus leucopygialis*, Gld. B. of Austr. ii. pl. 33; id. Handb. i. p. 154.

One specimen from Cape York. "No. 177, ♂. Bill blue tipped with black, feet black. Stomach contained insects."

## 7. GRAUCALUS HYPOLEUCUS, Gld.

*Graucalus hypoleucus*, Gld. B. of Austr. ii. pl. 57; id. Handb. i. p. 196.

One skin of this species from Cape York. "No. 151, ♀. Legs, bill, and eyes black. Stomach contained insects."

## 8. PACHYCEPHALA, sp. inc.

"No. 196, ♂. Pachycephala. Eyes brown, bill and legs horn-colour. Stomach had insects."

A single skin of a *Pachycephala* from Booby Island, immature, still retaining some of the rufous feathers characteristic of immaturity in its wings. It is certainly one of the species which, when adult, are yellow beneath, the under tail-coverts being bright gamboge-yellow. The species of this group are so hard to determine, unless males and in adult plumage, that it seems better to leave this bird, although not exactly like any *Pachycephala* I have been able to examine in the British Museum or in Mr. Godman's collection, without a name for the present, more particularly as Mr. Sharpe is, I believe, now working at this group for the next volume of his catalogue.

## 9. PINAROLESTES RUFIGASTER (Gld.).

*Colluricincla rufigaster*, Gld. B. of Austr. i. p. xxxvii; id. Handb. B. Austr. i. p. 226.

*Pinarolestes rufigaster*, Sharpe, Cat. of B. iii. p. 296.

"No. 170, ♀. Shrike."

One specimen, from Cape York, of this difficult genus. Mr. Gould, to whom I showed the specimen, was inclined to identify it with his *Colluricincla parvissima*<sup>1</sup> (Ann. & Mag. N. H. ser. 4, x. p. 114), and has kindly lent me the type of that species (which Mr. Sharpe, *t. c.* p. 297, treats as the young of *P. rufigaster*) for comparison. I find, however, that the Cape-York bird has a distinctly shorter wing, a stronger and more arched bill, and is less rufous on the underside. Mr. Sharpe, who has recently worked up this group for his catalogue, has examined this specimen, and refers it to *P. rufigaster*.

<sup>1</sup> Count Salvadori suggests that this really = *P. megarhynchus* of New Guinea.

10. *MANUCODIA GOULDI*, Gray.

*Manucodia gouldi*, Gld. Handb. B. Austr. i. p. 236; Sharpe, Cat. of B. iii. p. 181.

*Manucodia keraudreni*, Gld. B. Austr. Suppl. pl. 9.

Two female specimens. "No. 152. Bower-bird. Eyes orange, bill and legs black. Stomach contained small seeds. For curious loop in the wind-pipe see body. This bird was shot on the island opposite Somersset by Moseley." The colours of the soft parts and contents of the stomach are the same in the other specimen.

The two skins sent agree well with Mr. Sharpe's description and differ from Mr. Elliot's figure of the New-Guinea species (*M. keraudreni*) in the points noticed in Gray's original description of the species. The curious conformation of the trachea in *M. keraudreni* has long been known, having been originally described by Lessou. Beccari (Ibis, 1876, p. 252) says he thinks it probable that this is a peculiarity of the male sex. Mr. Murray's notes, however, would seem to contradict this view, unless, as is hardly likely, two species otherwise so nearly allied should differ in this peculiarity.

11. *PTILORHIS ALBERTI*, Elliot.

*Ptiloris alberti*, Ell. P. Z. S. 1871, p. 583; id. Mon. Parad. pl. xxiv.; Sharpe, Cat. of B. iii. p. 156.

*Ptiloris magnificus*, Gould, B. Austr. Supp. pl. 51.

*Craspedophora magnifica*, id. Handb. i. p. 595.

Six skins of this Rifle-bird from Cape York, four of which are adult males in full plumage, and one a female. Another, marked ♀, is either a young male coming into full plumage, or more probably an aged female assuming male plumage, as some of the feathers on the top of the head show traces of a metallic blue colour, as also does the shoulder, whilst more or fewer of the primaries on each side have acquired the black colour characteristic of the male. Of Nos. 164 and 165 it is noted in Mr. Murray's journal:—"Males: eyes, bill, and legs black, soles of the feet yellow. The stomach contained a red fruit, with a large stone about the size of a pea. Some parts of insects in 165." Of No. 184, "Female: eyes black; stomach contained ants and grubs." Besides the specimens sent, several others seem to have been procured. An interesting account of the shooting of these specimens will be found in Lord George Campbell's 'Log Letters from the 'Challenger,'' p. 185.

12. *MIMETA VIRIDIS* (Lath.).

*Mimeta viridis*, Gld. Handb. B. Austr. i. p. 462.

*Oriolus viridis*, Gld. B. Austr. iv. pl. 13; Sharpe, Cat. of B. iii. p. 212.

A young male from Cape York, agreeing generally with Mr. Sharpe's description (*l. c.*) of the young bird. "No. 169, ♂. Thrush."

13. *MIMETA FLAVOCINCTUS* (King).

*Mimeta flavocincta*, Gld. Handb. B. Austr. i. p. 466.

*Oriolus flavocinctus*, Gld. B. of Austr. iv. pl. 14.

*Oriolus flavicinctus*, Sharpe, Cat. of B. iii. p. 206.

An adult male from Cape York, agreeing with skins in Mr. Godman's collection, collected by Cockerell. "No. 189, ♂. Shrike. Eyes red, bill red, feet bluish."

14. *SPHECOTHERES FLAVIVENTRIS*, Gld.

*Sphecotheres flaviventris*, Gld. B. of Austr. Suppl. pl. 37; id. Handb. B. Austr. i. p. 468; Sharpe, Cat. of B. iii. p. 225.

Three specimens from Cape York, of which two are males in full plumage, agreeing with specimens in Mr. Godman's collection. "Nos. 172, 173. Eyes black, feet flesh, bill black." The third specimen is marked female ("No. 174, ♀. Eyes black, bill horn, legs brownish. Stomach contained insects and seeds"), but, as there are traces of yellow on the breast, is more probably a young male assuming the adult plumage. The orbits in this bird (in the skin) are dark brownish black, not yellow, though this is probably accidental. In other points, too, particularly in the plainly striated under tail-coverts, and the colouring of the upper surface of the head, the specimen hardly agrees with Mr. Gould's description of the female *S. flaviventris*. Mr. Gould, to whom I have shown it, would give no decided opinion on it; but Mr. Sharpe has examined it, and pronounces it to be of this species.

15. *PTILOTIS CHRYSOTIS*, Lewin.

*Ptilotis chrysolis*, Gld. B. of Austr. iv. pl. 32.

*Ptilotis lewini*, Swains.; Gld. Handb. B. Austr. i. p. 503.

Three skins of this common Australian species, which is not recorded from N. Australia in the 'Hand-book'—two from Cape York, one from Cape-York Island. "No. 150, ♀. Eyes brown, legs slate, bill black. Stomach contained insects." "No. 157, ♂. Eyes brown, bill black, legs blue, different from No. 156 (*P. filigera*). Stomach contained insects, same as 156."

16. *PTILOTIS FILIGERA*, Gld.

*Ptilotis filigera*, Gld. B. of Austr. Suppl. pl. 42; id. Handb. B. Austr. i. p. 522.

A single example, from Cape-York Island, of this distinct Honey-eater, originally described by Mr. Gould from this district. "No. 156, ♂. Eyes brown, bill black, legs bluish. Stomach contained insects and small brown bodies like seeds."

17. *PHILEMON BUCEROIDES*, Swainson.

*Tropidorhynchus buceroides*, Gld. B. of Austr. Suppl. pl. 44; id. Handb. B. Austr. i. p. 547.

One specimen from Cape York, agreeing with specimens in Mr. Godman's collection. "No. 160, ♀. Leatherhead. Eyes dark red, bill and skin about the head black. Stomach contained beetles and other insects."

## 18. MYZOMELA OBSCURA, Gld.

*Myzomela obscura*, Gld. B. of Austr. iv. pl. 67; id. Handb. B. Austr. i. p. 559.

A single skin from Cape York. "No. 159, ♂. Eyes brown<sup>1</sup>."

## 19. DICEUM HIRUNDINACEUM (Shaw).

*Dicæum hirundinaceum*, Gld. B. of Austr. ii. pl. 34; id. Handb. B. Austr. i. p. 581.

A single specimen in full plumage, from Cape York. "No. 149, ♂. Eyes black, legs and bill black. Stomach contained green fruit."

## 20. NECTARINIA FRENATA, Müll.

*Nectarinia australis*, Gld. B. of Austr. Suppl. pl. 45; id. Handb. B. Austr. i. p. 584.

Three specimens from Cape-York Island (two males in full plumage, and a female) of this Sun-bird, which Mr. Selater has recently shown to be the *Nectarinia frenata* of Müller (see P. Z. S. 1877, p. 104). "No. 153, ♂; 154, ♂; 155, ♀. Eyes brown, legs and bill black. Stomach contained small insects."

## 21. ZOSTEROPS LUTEUS, Gld.

*Zosterops luteus*, Gld. B. of Austr. iv. pl. 83; id. Handb. B. Austr. i. p. 590.

One specimen from Booby Island ("No. 197, ♀. Eyes brown, feet and bill with a bluish tinge. Stomach had small seeds"), which agrees with a specimen of this species collected by Macgillivray, kindly lent to me by Mr. Gould for comparison.

## 22. CACOMANTIS FLABELLIFORMIS (Lath.).

*Cacomantis flabelliformis*, Gld. Handb. B. Austr. i. p. 618.

*Cuculus cineraceus*, Gld. B. of Austr. iv. pl. 86.

A female, from Cape York, of this Cuckoo, agreeing with specimens in Mr. Godman's collection, except in having the breast and underparts much duller rufous, and faintly freckled and banded with dusky—indications, probably, of a young bird. "No. 146, ♀. Cuckoo. Eyes brown, legs yellow on hind aspect, brown on front, bill brown. Contained insects in stomach."

## 23. CENTROPUS PHASIANUS (Lath.).

*Centropus phasianus*, Gld. B. of Austr. iv. pl. 92; id. Handb. B. Austr. i. p. 634.

A female from Cape York. "No. 163. Legs bluish, bill horn. Stomach contained insects."

## 24. MICROGLOSSUM ATERRIMUM (Gmel.)

*Microglossum aterrimum*, Gld. B. of Austr. Suppl. pl. 61; id. Handb. B. Austr. ii. 27; Finsch, Pap. i. p. 370.

A pair of specimens from Cape York. "No. 185, ♂: eyes

<sup>1</sup> Mr. Gould says "bright red."

black; stomach contained seeds and fruit. No. 188, ♀: stomach contained fruit, same as 185." The male has the beak larger, and feathers of the crest more developed than the female.

25. *TRICHOGLOSSUS SWAINSONII*, Gld.

*Trichoglossus swainsonii*, Gld. B. of Austr. v. pl. 28.

*Trichoglossus multicolor*, Gld. Handb. B. Austr. ii. p. 93.

A pair of this well-known species from Cape York. "No. 145, ♂. Legs and eyes grey. Bill orange, with a darker tinge. Green fruit." "No. 166, ♂. Same as 145."

This species of *Trichoglossus* is not recorded from the north part of Australia in Mr. Gould's Hand-book, though, as noticed by Finsch (Papag. ii. p. 822 and 824), it extends northwards as far as Cape York.

26. *PTILOPUS SUPERBUS* (Temm.).

*Ptilonopus superbus*, Gld. B. of Austr. v. pl. 57.

*Lamprotreron superbus*, id. Handb. B. Austr. ii. p. 108.

Two males and a female, from Booby Island, of this Fruit-pigeon. "No. 193, ♀; 194, ♂. Eyes yellow, bills greenish, feet red. Stomachs had nothing in them." "No. 198, ♂. Dove; same as 194. Stomach contained nothing."

27. *CARPOPHAGA ASSIMILIS*, Gld.

*Carpophaga assimilis*, Gld. B. Austr. Suppl. pl. 67.

*Megaloprepia assimilis*, Gld. Handb. B. Austr. ii. p. 111.

A male from Cape York, agreeing in coloration and size with specimens in Mr. Godman's collection. "No. 180: Feet green, eyes red, bill greenish yellow, red at base and about nostrils."

28. *GEOPELIA HUMERALIS* (Temm.).

*Geopelia humeralis*, Gld. B. of Austr. v. pl. 72.

*Erythrauchæna humeralis*, id. Handb. B. Austr. ii. p. 142.

One from Cape York. "No. 171, ♂. Eyes red, feet purple, bill black. Stomach contained fruit."

29. *GEOPELIA TRANQUILLA*, Gld.

*Geopelia tranquilla*, Gld. B. Austr. v. pl. 73; id. Handb. B. Austr. ii. p. 144.

A single specimen, apparently immature, of this little ground-dove from Cape York. "No. 148, ♀. Eyes white, cere blue, bill slate, legs pale flesh-colour. Stomach contained small seeds."

30. *MEGAPODIUS TUMULUS*, Gld.

*Megapodius tumulus*, Gld. B. of Austr. v. pl. 79; id. Handb. B. Austr. ii. p. 167.

A single specimen, unsexed, of a Megapode, from Cape York, agreeing with Mr. Gould's description of *M. tumulus*. "No. 168."

31. *TALEGALLA LATHAMI* (Gray).

*Talegalla lathami*, Gld. B. of Austr. v. pl. 77.

A male from Cape York, a district from which it is not recorded by Mr. Gould.

"No. 187. Eyes yellow<sup>1</sup>, head red. Stomach contained seeds."

32. *TURNIX MELANOTA*, Gld.

*Turnix melanotus*, Gld. Handb. B. Austr. ii. p. 182.

*Hemipodius melanotus*, B. of Austr. v. pl. 84.

Two females of this species, originally described by Mr. Gould from Moreton Bay, agreeing perfectly with the description in the 'Hand-book.' "No. 176. Cape York, Albany Island. Eyes white, feet yellow, bill yellow and black. Stomach contained insects." "No. 195. Booby Island. Eyes white, legs yellow, base of bill yellow, tip black. Stomach contained small round seeds."

33. *SYNÆCUS CERVINUS*, Gld.

*Synæcus cervinus*, Gld. Handb. B. Austr. ii. p. 195.

A Quail, from Cape-York Island, which agrees with specimens of this species in Mr. Gould's collection. "No. 175, ♂. Eyes brown, feet yellow, (bill?) bluish black."

34. *ÆGIALITES INORNATUS* (Gld).

*Hiaticula inornata*, Gld. B. of Austr. vi. pl. 19.

*Ochthodromus inornatus*, Gld. Handb. B. Austr. ii. p. 237.

A female, from Wednesday Island, agreeing with specimens in Mr. Godman's collection, but with the markings on the face and the pectoral band somewhat darker. "No. 191. Wednesday Island. Eyes, legs, and bill black."

35. *TOTANUS INCANUS* (Gm.).

*Totanus pulverulentus*, Müll. Naturk. Verhand. Land- en Volkenk. p. 152.

*Totanus griseopygius*, Gld. B. of Austr. vi. pl. 38.

*Gambetta pulverulentus*, Gld. Handb. B. Austr. ii. p. 268.

One from Wednesday Island. "No. 190, ♀ Sandpiper. Legs yellow, bill blackish, eyes black. Stomach contained remains of Crustacea."

36. *STREPSILAS INTERPRES*, L.

Three specimens from Raine Island. "No. 128, ♂. Eyes brown, feet light red with black claws, bill black. Stomach contained small calcareous particles." "No. 129, ♀. Same as 128." "No. 142, ♀. Same as 128."

37. *RALLUS PECTORALIS*, Gld.

*Rallus pectoralis*, Gld. B. Austr. vi. pl. 76.

Two males and a young female, from Raine Island, of this well-

<sup>1</sup> "Brown," according to Mr. Gould; his was probably a younger bird.



known species. The young bird, No. 130, resembles the old one generally in coloration, but has all the colours duller, the transverse barring of the lower surface much less conspicuous and altogether wanting on the breast, the white spots of the scapularies absent, those on the wing-coverts smaller, and those on the tertiaries also smaller, and tinged with rufous; the primaries also are less conspicuously banded with rufous.

“Nos. 126, 127, males. Eyes red, upper mandible dark, the lower with a slight red tinge, feet light brown. Stomach contained beetles, egg-shells, and small calcareous particles.”

2. On a Collection of Birds from Abeokuta. By FRANCIS NICHOLSON, F.Z.S.

[Received December 20, 1877.]

(Plate X.)

I have lately received from my friend, Mr. Henry Robin, a small collection of birds made by him in the neighbourhood of Abeokuta. Although preserved in spirits, the birds arrived in very good condition, and have made fair specimens. On showing them to my friend Mr. R. Bowdler Sharpe, he strongly advised me to publish a short list of the species, inasmuch as we have never received any natural-history specimens from Abeokuta before. This collection also adds a species or two to the avifauna of Western Africa; and one bird appears to be new. I have deposited a series of the skins in the British Museum; and Mr. Sharpe has confirmed my identifications. I am indebted to him for a comparison of some of the more obscure species.

1. *SCOPS LEUCOTIS* (Temm.); Sharpe, Cat. B. ii. p. 97.

One specimen, which has apparently died in captivity. I am not aware of the occurrence of this species in West Africa below Senegal having been noted.

2. *MELÆNORNIS EDOLIOIDES* (Sw.); Sharpe, Cat. B. iii. p. 315.

One specimen, somewhat extending the range of this species in Western Africa.

3. *LANIUS SMITHII*, Fraser; Sharpe, Cat. Afr. B. p. 50. no. 478.

Two adults, and three young birds in changing plumage; all apparently males, with no red on the flanks.

4. *DRYOSCOPIUS GAMBENSIS* (Licht.); Sharpe, Cat. Afr. B. p. 48. no. 453.

One male specimen.

5. *DRYOSCOPIUS MAJOR*, Hartl.; Sharpe, Cat. Afr. B. p. 47. no. 450.

An adult specimen.